

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A high emissivity radiator comprising a substrate, an amorphous carbon layer formed on a radiating surface of the substrate, and a metallic carbide layer interposed between the substrate and the amorphous carbon layer and a protective layer formed on the amorphous carbon [[layer]] layer, wherein the amorphous carbon layer is soft and susceptible to scratches.

2. (Previously Presented) The radiator of claim 1, wherein the metallic carbide-forming carbide layer comprises titanium.

3. (Previously Presented) The radiator of claim 1, wherein the amorphous carbon layer and/or the carbide layer has a thickness in the range of 0.1 micrometres to 1.0 micrometres.

4. (Cancelled).

5. (Previously Presented) The radiator of claim 1, wherein the protective layer is substantially transparent to infrared radiation.

6. (Previously Presented) The radiator of claim 5, wherein the protective layer comprises at least one of SiC, SiO₂, diamond and diamond-like carbon.

7. (Currently Amended) A method of making a radiator having an emissivity of at least 30% for radiation of wavelength in the range of 3μm to 5μm, the method comprising the steps of:

providing a substrate having a radiating surface;

forming a metallic carbide-forming layer on the radiating surface;

forming an amorphous carbon layer on and in contact with the metallic carbide-forming [[layer]] layer, wherein the amorphous carbon layer is soft and susceptible to scratches; and

forming a protective layer on the amorphous carbon [[layer]] layer,

wherein each of the metallic carbide layer, the amorphous carbon layer, and the protective layer has a thickness of less than 1 micrometer.

8. (Original) The method of claim 7, wherein the amorphous carbon layer and/or the metallic carbide forming layer is formed by sputter deposition or evaporation.

9. (Cancelled).

10. (Previously Presented) The method of claim 1, wherein the radiator is annealed after the steps of forming the metallic carbide-forming and amorphous carbon layers.

11. (Cancelled)

12. (Cancelled)

13. (Currently Amended) A radiator comprising:

a substrate;

a soft amorphous carbon layer formed on the ~~[[substrate]]~~ substrate, wherein the soft amorphous carbon layer is susceptible to scratches; and

a metallic carbide layer interposed between the substrate and the amorphous carbon layer, wherein the metallic carbide layer is in contact with the amorphous carbon layer.

14. (Previously Presented) The radiator of claim 13, being a high emissivity radiator.

15. (Previously Presented) The radiator of claim 13 wherein the amorphous carbon layer is an annealed amorphous carbon layer.

16. (Currently Amended) A method of making a radiator comprising the steps ~~[[of]]~~ of:

providing a metallic carbide-forming layer on a substrate; and

forming a soft amorphous carbon layer on and in contact with the metallic carbide-forming ~~[[layer]]~~, layer, wherein the soft amorphous carbon layer is susceptible to scratches.

17. (Previously Presented) The method of claim 16 wherein the radiator is a high-emissivity radiator.

18. (Previously Presented) The method of claim 16 wherein the metallic carbide-forming layer is provided as an integral surface layer of the substrate.

19. (Previously Presented) The method of claim 16 wherein the metallic carbide-forming layer is provided as a separate layer on a surface of the substrate.

20. (Previously Presented) The radiator of claim 2, wherein the amorphous carbon layer and/or the carbide layer has a thickness in the range of 0.1 micrometres to 1.0 micrometres.

21. (Cancelled).

22. (Previously Presented) The radiator of claim 13, wherein the carbide layer comprises titanium.

23. (Previously Presented) The method of claim 7, wherein the radiator is annealed after the steps of forming the amorphous carbon layer.

24. (Previously Presented) The method of claim 16, wherein the radiator is annealed after the steps of forming the amorphous carbon layer.

25. (Currently Amended) The radiator of claim 1, wherein each of the metallic carbide layer, the amorphous carbon layer, and the protective layer has a thickness of less than 1 micrometer, and

wherein the radiator has an emissivity of at least 30% for radiation of wavelength in the range of 3 μ m to 5 μ m.